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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

FERGUSON, MARISSA L

ART UNIT PAPER NUMBER

2854

DATE MAILED: 02/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/824,817

Applicant(s)

CHENG, WEN LUNG

Examiner

Marissa L Ferguson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351 (a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 16 is rejected under 35 U.S.C. 102(e) as being anticipated by Rubenson et al. (US Patent 6,842,332). Rubenson et al. teaches a keyboard comprising a housing (102), a plurality of keys (107) slidably supported on a housing respectively and a means for generating air (166) to circulate the air through said keys.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4,9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Staley (US Patent 5,220,318) in view of Kroeppe (US 3,831,730).

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Regarding claims 1, 3 and 4, Staley teaches a keyboard comprising a housing (10) including a plurality of passages formed therein and each defined by a cylindrical member (28), a plurality of keys (36,37) each including a shank (38) slidably engaged in the passages of a housing respectively. However, he does explicitly disclose a means for generating electromagnetic floating force to float keys relative to a housing and magnets attached to keys respectively. Kroppe teaches a keyboard with permanent magnets attached to keys producing magnetic fields and an electromagnetic means (Column 1, Lines 39-49, Column 2, Lines 7-12, Column 3, Lines 3-13 and Lines 18-23).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention as taught by Staley to include magnets and electromagnetic means as taught by Kroeppe, since Kroeppe teaches that it is advantageous to provide a rapid bounce back force thereby causing the fingers of the operator to poise for a more rapid and efficient continuing keyboard operation.

Regarding claim 2, Staley teaches an electromagnetic floating force-generating means includes a plurality of coils (42) arranged to generate the electromagnetic floating force.

Regarding claim 9, Staley teaches the invention claimed with the exception of a housing including a switch to control the coils. Kroeppe teaches a switch (8) that controls the coils. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention as taught by Staley to include a switch as taught by Kroeppe, since

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Kroeppe teaches that it is advantageous to provide a rapid bounce back force thereby causing the fingers of the operator to poise for a more rapid and efficient continuing keyboard operation.

Regarding claim 10, Staley teaches a housing (10) including a plurality of recesses (it is inherent that the housing has recesses in order for the key to depress) formed therein and each defined by a peripheral wall (the area surrounding the keys when depressed), and each of the keys includes a knob (36) having a peripheral skirt slidably engaged in the recesses of a housing respectively.

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Staley (US Patent 5,220,318) in view of Kroeppe (US 3,831,730) as applied to claim 1 above, further in view of Lee (US Patent 5,199,556).

Staley and Kroeppe both teach the claimed invention with the exception of a housing including a plurality of pads disposed in the cylindrical members and aligned with the shanks the keys. Lee teaches a key switch associated with a keyboard and includes a plurality of pads (4) disposed in a cylindrical member (1 and Figure 1). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to further modify the invention as taught by Staley to include a plurality of pads as taught by Lee, since Lee teaches that it is advantageous to exhaust squeezed air in order to eliminate noise from the striking keys.

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4. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Staley (US Patent 5,220,318) in view of Kroeppe (US 3,831,730) as applied to claim 1 above, further in view of Al-Safar (US Publication 2003/0072595).

Staley teaches the claimed invention with the exception of a housing including an outer peripheral portion having a plurality of light devices disposed therein and includes a switch to control the light devices. Al-Safar teaches a keyboard with lights located in several locations including an outer portion of the keyboard (Figure 3) and a switch (220) used to control the lights. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention as taught by Staley to include lights and a switch as taught by Al-Safar, since Al-Safar teaches that it is advantageous to provide lights for allowing the use of the keyboard without turning room lights on and to include a switch for controlling the illumination of the keys and/or shutting off when needed.

5. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Staley (US Patent 5,220,318) in view of Kroeppe (US 3,831,730) as applied to claim 1 above, further in view of Rubenson et al. (US Patent 6,842,332).

Staley and Kroeppe both teach the claimed invention with the exception of a housing including at least one fan device disposed therein to circulate air through the keys and a switch to control at least one fan device. Rubenson et al. teaches a computing device with a fan (166) located within the housing and it is obvious

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that there is some type of switching device that controls the fan inside the housing. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention as taught by Staley to include a fan and a switch as taught by Rubenson et al., since Rubenson et al. teaches that it is advantageous to prevent overheating of the keyboard and to include a switch for controlling the cooling rate of the fan.

Allowable Subject Matter

6. Claims 5-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is an examiner's statement of reasons for allowance:

Regarding claim 5, the prior art does not teach or render obvious a housing including a plurality of sleeves engaged in the passages thereof respectively, to retain the coils in the sleeves respectively.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marissa L Ferguson whose telephone number is (571) 272-2163. The examiner can normally be reached on (M-T) 6:30am-4:00pm and every other(F) 7:30am-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marissa L Ferguson
Examiner
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